DOCUMENT RESUME

ED 109 924 FL 007 023

AUTHOR Snow, Catherine E.
TITLE Semantic Primacy in First and Second Language Acquisition.
PUB DATE 75
NOTE 21p.
AVAILABLE FROM C.E. Snow, Institute for General Linguistics, University of Amsterdam, Spui 21, Amsterdam, The Netherlands

EDRS PRICE MF-$0.76 HC-$1.58 PLUS POSTAGE
DESCRIPTORS Cognitive Processes; *Dutch; Error Patterns; Interference (Language Learning); *Language Development; *Learning Processes; Learning Theories; Linguistic Theory; *Psycholinguistics; *Second Language Learning; Semantics

ABSTRACT

Preliminary results from a longitudinal study of English-speaking children and adults learning Dutch in natural situations suggest that 12- to 15-year-olds learned faster than either older or younger subjects during their first 6 months in Holland. All age differences had disappeared in a group of advanced subjects (English-speakers who had been in Holland for more than a year). The mistakes made by the second language learners on a translation task were very similar to the kinds of mistakes made by young children in their first language. It is suggested that the source of mistakes in both first and second language acquisition is a lack of isomorphism between knowledge of the world and the distinctions expressed in the language. In first and second language acquisition, this is caused by relatively arbitrary linguistic subsystems; in second language acquisition it can also be caused by interference from the distinctions learned in the first language. First and second language acquisition are very similar in the stages and strategies which characterize them, and there is no reason to believe that young children learn language more easily than or in a different way from older children and adults. (Author)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

ED109924

Semantic Primacy in First and Second Language Acquisition[1]

Catherine E. Snow
Institute for General Linguistics
University of Amsterdam
Spui 21
Amsterdam, The Netherlands

[1]This research was supported by the Dutch Foundation for the Advancement of Pure Scientific Research (ZWO).

FL00 7023

U.S. DEPARTMENT OF HEALTH EDUCATION & WELFARE NATIONAL INSTITUTE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY.

PERMISSION TO REPRODUCE THIS COPYRIGHTED MATERIAL BY MICRO FICHE ONLY HAS BEEN GRANTED BY
Catherine Snow
TO ERIC AND ORGANIZATIONS OPERATING UNDER AGREEMENTS WITH THE NATIONAL INSTITUTE OF EDUCATION FURTHER REPRODUCTION OUTSIDE THE ERIC SYSTEM REQUIRES PERMISSION OF THE COPYRIGHT OWNER

The basic question which I wish to discuss in this paper is whether first and second language acquisition result from the same underlying process. This question is important because of its relevance to the issue of whether a critical period for language acquisition exists. The contention that the ages 2-10 represent a critical period for language acquisition (see Lenneberg, 1967, for the classic statement of this view) would imply that second language acquisition which occurs after this age will be quite different in nature from first language acquisition. If, however, it can be demonstrated that language acquisition before and after 10 years of age are very similar, then the critical period hypothesis must be abandoned in its strong form. A weak version of the critical period hypothesis, which states that a first language can not be acquired after the age of puberty, could still be maintained.

Several reasons have been offered for assuming that first and second language acquisition are very different processes. First language acquisition has been commonly described as occurring quickly, easily, automatically, and naturally, whereas second language acquisition occurs, if at all, with difficulty, slowly, and as the result of conscious application on the part of the learner. In addition, one learns one's first language perfectly, whereas a second language, especially if it is acquired after early childhood, is spoken less fluently and with an accent. It has also been argued that the effect on cognitive processes of having a first language is so great that the acquisition of a second language must inevitably be affected by it.

Closer inspection of these arguments reveals that they rely on questionable observations about the nature of language acquisition. First language acquisition is neither a short nor an effortless process; it takes at least 10 years to achieve adult-like control of all the syntactic subtleties of English, and even longer in a heavily inflected language like Russian (Slobin, 1966). During

at least part of those 10 years children are devoting a large amount of time and energy to learning language, and their caretakers are actively involved in many pedagogical activities designed to help them. This time span compares rather unfavorably with the 2--3 years normally required by adults to achieve fluency in a second language. Furthermore, the notion that one speaks one's first language perfectly is a very confused one, derived in part from Chomsky's competence-performance distinction which ascribes the same competence to all speakers. Even within this theory there is room for large individual diff rences in performance, but recent work has revealed nondialectical individual differences in competence sufficient to have necessitated introduction of the concept 'idiolect' (e.g., Gleitman & Gleitman, 1970; Heringer, 1970). Insufficient research has been done on the extent of individual differences in language ability to be able to draw a definitive conclusion, but there is at the moment no counter-evidence to the hypothesis that large individual differences exist in first language ability. The range of individual differences is, of course, considerably greater in second than in first language, which may well reflect differences in motivation rather than differences in the processes of acquisition. However, low ability seems to be especially typical of the phonological system in second language acquisition; many excellent and fluent second language speakers retain a foreign accent. This might indeed reflect a critical period for phonological acquisition, and suggest that we must search for a whole set of separate processes which occur simultaneously in language acquisition.

Furthermore, the differences between the situations in which first and second languages are acquired are at least as great as the differences in the effectiveness of the two acquisition processes. Macnamara (1973) has pointed out how some of the differences in situation may affect second language acquisition, which he also

believes to be basically similar to first language acquisition. A true comparison of the speed and ease of first and second language acquisition, and of the processes by which they both occur, can be made only if these adventitious differences in situation are excluded. Acquiring a second language is, in general, more of a 'free choice' than acquiring a first language, and is therefore more affected by such diverse factors as motivation, desire to be able to communicate with the native speakers, interest in and admiration of the culture to which the language gives access, willingness to endanger one's own established personaltiy by using a different, less effective idiom, etc. (see Christopherson, 1973; Gardner, 1973; Jakobovits, 1970; Lambert & Gardner, 1972). Furthermore, second language learners, simply by virtue of the fact that they are not two-years-old any more, hear a very different kind of language from first language learners. First language learners benefit from simplified, redundant, pedagogically organized input (Snow, 1974), which almost inevitably gives more useful information about the nature of the language to be learned than input to second language learners. These differences between the situations of first and second language acquisition undeniably create some difficulties for a direct comparison of first and second language acquisition, but they do not in themselves imply that second language acquisition is a different process from first language acquisition. In fact, it is necessary to exclude these variables or, where this is not possible, to measure their influence, in order truly to be able to compare first and second language acquisition. Since excluding all these variables is not, practically speaking, possible, the best one can do is to study second language acquisition in as natural a situation as possible. In addition, one can look at the second language acquisition of very young children, who are still enjoying the benefits of any critical period that may exist, and compare it to that of older children and adults in similar situations.

Marian Hoefnagel-Höhle and I are engaged in a research project designed to do just this.

We have been studying the acquisition of Dutch by 41 English-speaking children and adults during their first year living in Holland. The subjects, who fall into five age groups (see Table 1 for distribution of subjects into age groups), were tested with an extensive test battery in September-October, 1974, shortly after the beginning of the school year for the children and within three months of arrival in Holland for the adults. The same test battery will be administered after four months, in January-February, 1975, and again after eight months, in May-June, 1975. The test battery was designed to provide, insofar as possible, separate measures for all the potentially identifiable components of skill in second language acquisition, since we wish to be able to test the hypothesis of similarity or differences between first and second language acquisition separately for phonology, morphology, syntax, vocabulary, and general fluency. The tests included:

1. Phonology. Active control of pronunciation was tested with the Picture-naming Test, in which subjects were asked to repeat the names of pictures after the experimenter (a native speaker), and then to name the pictures himself without an immediately preceding model. The pictures were chosen to require pronunciation of potentially problematical phonemes at least once in several different contexts. The Picture-naming Test is being scored on a five-point scale by a native speaker, who achieves a high degree of reliability in scoring. Passive control of the Dutch phonological system was tested with the Auditory Discrimination Test, in which the subject was asked to point to the picture being named by the experimenter. The pictures and names were chosen so as to represent minimal pairs for the following sounds: intervocalic /ɑ/-/a:/, /ɔ/-/o:/-/ɑu/, /ɪ/-/i:/, /ɑ/-/ɔ/, /ø:/-/y:/, and /œy/-/ø:/-/u/; /e:/-/ɛj/ in open syllables; initial /d/-/t/ and

/b/-/p/; and final /x/-/k/.

2. Control of the Dutch morphological system was tested with regard to noun plurals, diminutives, agentives, past tense, and past participles, with the procedure devised by Berko (1958). Subjects were presented with nonsense pictures and were told, for example, "This is a wug. Here is another one. Now we have two..." with a questioning intonation. Appropriate pictures were chosen for the various subtests (e.g., "This is a wug, and here is a small one. The small one is called a...?", etc.). Common, familiar words were used before nonsense words were introduced in each subtest.

3. Vocabulary. Vocabulary was tested with the Dutch version of the Peabody Picture Vocabulary Test (PPVT) (Manschot & Bonnema, 1974), which has been standardized up to age eight, i.e., the first 100 items. We translated and/or modified the last 50 items ourselves for use with older children and more advanced second language learners. The English version of the PPVT (Dunn, 1959) was administered during the first test session as well, to provide some basis for judging the subjects' skills in their first language. As a further check on vocabulary, the Category-naming Test, in which the subjects were given one minute to produce as many words as possible within a given category, e.g., animals or fruits and vegetables, was administered in both Dutch and English.

4. Syntax. Control of syntax was tested with a Translation Test, a Sentence Repetition Test, and a Correction Test, in which correct and incorrect versions of Dutch sentences were read aloud and the child was asked to pick the best one. The same syntactic problems were to some extent represented in all three tests. The Translation Test was the most complete and the longest of the three.

5. Running speech. The subjects were asked to tell a story on the basis of pictures provided, both in Dutch and in English, as a check on their ability to produce reasonably fluent speech, and

to be able to determine whether the mistakes they made in the more structured test situations were typical of their speech in general. To test comprehension of running speech, the children were asked to retell in English a simple Dutch story after hearing it one time from the tape recorder. The retold version was scored on thirty key points.

As only one test session has been completed (and the results of that one not yet fully analyzed), the results to be discussed here will of necessity be preliminary and nonlongitudinal. Fortunately, a number of more advanced second language learners in all age groups except the youngest were tested as well, which will enable us to give at least some cross sectional information about speed of development (see Table 1 for distribution of advanced subjects across age groups). These advanced subjects were English-speakers who had been in Holland for at least a year prior to the test session. In other respects they were very similar to the beginners. I will make only brief comments about the speed and order of acquisition of phonology, morphology, and vocabulary, before going on to concentrate on syntax, especially the results from the Translation Test.

Phonology. The sounds which gave the greatest trouble in production were: /ɶy/, /ø/, /ɛj/, /ɔx/, and /x/. These sounds were not only most difficult for the groups of beginners, but were also the ones which were not pronounced perfectly by the advanced second language learners. These results from production agree partly with the results from the Auditory Discrimination Test, in which the distinctions between intervocalic /ɶy/-/ø/ and /ɑ/-/a:/ were the most difficult, with the initial /d/-/t/ and /b/-/p/ distinctions giving rather little difficulty, and the other distinctions intermediate in difficulty.

No statistical analysis has yet been performed on the results from the two phonology tests, so firm conclusions are not possible. However, a first impression of the data makes it clear that the younger children perform about the same as the teenagers and adults on both tests (see Table 2 for results from the Auditory Discrimination Test).

Morphology. The rules for the formation of the plural were the earliest and the best learned, followed by the diminutive and the agentive, then by the verb forms, which were quite impossible for most of the subjects tested, including some of the more advanced (see Table 2). A common pattern was apparent for the plural, diminutive, and agentive, in that the most frequent allomorphs (-en, -tje or -etje, and -er, respectively) were learned quite easily, whereas the less frequent allomorphs (-s, -kje, and -aar, respectively) were controlled by hardly any of the beginners tested. However, many subjects who were unable to produce these infrequent allomorphs did seem implicitly to recognize the environments in which they were required, as evidenced by the fact that they refused to produce any form or produced a very idiosyncratic form for those words, rather than an overgeneralized form. Although they did not know what the correct form was, they did seem to know that, for example, jongenen, koningtje, and wandeler would be wrong.

Vocabulary. As might be expected, scores on the Dutch PPVT increased with age, although this increase levelled off so that there was no distinction between adults and teenagers (see Table 2). The adults' English PPVT scores were considerably higher than the teenagers'. In the groups of advanced subjects, Dutch PPVT scores closely approximated English scores, except for the adults, who were without exception superior in English vocabulary. For the youngest children, learning Dutch vocabulary seemed to compete with learning English vocabulary, and their scores on the English PPVT were lower than could have been expected from these children in a monolingual environment.

Syntax. The Translation Test was perhaps the most complete and extensive test in the whole battery, and could in some sense be said to reflect all aspects of language skill. Knowledge of vocabulary and knowledge of syntax are inextricably linked up in performance on the Translation Test, but an attempt has been made to distinguish

between them in the scoring.

In terms of general performance, the results of the translation task argue very convincingly against a critical period hypothesis; performance improved with age consistently, except that the adults were slightly worse than the teenagers (see Table 2). The slight decrease in adults' scores undoubtedly reflects differences between the language environment of the younger groups, all of whom were spending six hours a day in Dutch schools, and the adults, who were considerably less dependent on Dutch as a means of communication even when they were working in Dutch environments (and five of the 10 adults did not have jobs).

The pattern of improvement with age can be found not only in the total test score, but also in scores on each of the variables that was scored separately in the Translation Test (see Table 3), including such disparate items as subject, adverbial, and preposition, which reflected knowledge of the correct vocabulary item, various verb variables, which reflected knowledge of inflections, and tense, conjunctions & complementizers, indirect object, and word order, which reflected knowledge of the syntactic structure of Dutch. In almost all cases, older children were better than younger children, and the adults were slightly worse than the oldest group of children but better than all the youngest children.

Nor can it be claimed that teenagers and adults learned faster in the initial stages, but failed to attain the same level of skill as the children. There were no significant differences among the age groups for the advanced speakers (Table 3), suggesting that advanced subjects of all ages were equally good at the skills required for the translation task. In fact, none of the advanced subjects attained a perfect total score (325) on the translation task, but the highest score was attained by the adult whose language environment most closely resembled that of the children, in that she was a full-

time student.

Discussion. Neither the results of the tests discussed in some detail here, nor the others which we have not yet fully scored, offer any support for the point of view that children are better language learners than adults. If anything, they are worse, as would be expected on the basis of their shorter memory span and poorer control of general learning skills. There is no evidence that young children have any special sensitivity to or ability for language which can override these other disabilities.

There is also positive evidence that second language acquisition is very much the same for 3-5 year olds as for adults, in terms of the kinds of mistakes they make, the kinds of acquisition strategies they employ, and the types of structures and rules they find easy and difficult. It is to the question of what determines ease or difficulty of a structure in language acquisition that the term 'semantic primacy' in the title of this paper refers (see Macnamara, 1972, for a more complete statement of the notion of semantic primacy). Two factors seem to be able to make a structure in a second language relatively difficult to learn: (a) its lack of isomorphism with the related structure in the speaker's first language, and (b) its occurrence within what I would like to call a 'semantically weakly-based system'. The first factor has often been remarked on, under the name 'interference'. It is presumably relevant only to second language acquisition, and is one of the factors serving to make second language acquisition different from first language acquisition. I hope to be able to show that this is only a superficial difference. The second factor relates to the differences between systems which seem to be based on obvious distinctions that are important in our understanding of the world, and systems based on relatively arbitrary distinctions, which might never be made if the language did not require them. An example of a semantically strongly-based system would be singular-plural, or tense, in which concepts which are

fairly accessible even for young children are expressed linguistically. Learning the subsystem of the language involves learning only how to express that distinction, not what the distinction is, for that is something even a young child already knows. Learning semantically weakly-based systems such as gender or prepositions requires noticing first of all that the distinction is made, then learning what distinctions are made, then learning how they are expressed. In fact, these two semantically weakly-based systems, gender as expressed in definite articles and in relative pronouns, and prepositions of time, place, and direction, were two of the variables with which the sbbjects had the most difficulty in the Translation Test, and which even the advanced subjects had not fully mastered. It would be valuable to determine whether, as I think must be the case, normal learners of Dutch as a first language experience difficulty with these subsystems as well.

Some persistent difficulties which can be traced to problems of interference inlcuded the choice of subordinating conjunctions and the use of positional verbs. In these cases, a distinction is expressed in Dutch which is not expressed in English. The subjects had great difficulty in learning to use toen instead of wanneer in introducing subordinate clauses in the past tense, in learning to use of instead of als in introducing indirect questions, and in learning to use staan and liggen instead of zijn when expressing location. None of these distinctions is arbitrary or weakly semantically based, and one would not expect Dutch children to have special difficulty in acquiring them. Nonetheless, they caused a problem for the English speakers because the distinction had somehow become inaccessible to them. It was necessary for them to notice that the distinction was being made before they could learn how to make it, and this was a step that even some advanced speakers had not yet taken. Thus, interference operates as a factor in determining difficulty primarily by making some subsystems of the language relatively inaccessible. Other cases in which the subsystems are equally dissimilar, e.g.,

negation in Dutch and English, showed no interference (no subject tried to introduce do-support in Dutch negatives, and the use of the negative geen before indefinite nouns was mastered rather easily) precisely because the rules governing negation in Dutch do not go outside the set of semantic distinctions relevant to the same system in English. The basic factor causing difficulty in either first or second language acquisition is the lack of isomorphism between the way knowledge of the world is organized and the distinctions the language expresses. This lack of isomorphism can be occasioned by a relatively arbitrary subsystem within the language, or by experience with another language which has taught one to ignore certain distinctions. These two sources of difficulty are essentially the same, in that both derive from the primacy of semantics in language acquisition.

Within this theory of semantic primacy, both first and second language acquisition can be seen as consisting of many separate learning processes, each characterized by three steps:

1. The language learner is unaware of some distinction which is important in the language he is learning, and therefore makes mistakes in utterances to which the distinction is relevant without realizing it. In acquisition of English as a first language, for example, children are often unaware of the nominative-accusative distinction, and therefore produce utterances like me do it. A similar example from our subjects was their lack of awareness that gender was relevant to the choice of the relative pronoun, causing them to use the neuter relative pronoun dat regardless of antecedent.

2. The language learner becomes aware that his utterances do not match the model utterances, and begins to seek information in the input which will enable him to formulate the correct rule. This stage in the learning process is very variable in length, depending on whether the learner is fortunate in finding relevant and unambiguous information quickly. Normally this period is characterized by great

variability in production, with I do it and me do it or die and dat in more-or-less free variation.

3. The language learner has collected enough information to formulate the rule governing the structure correctly, and can be said to have learned the rule. This does not mean that he will make no further mistakes with the structure. The English-speaker learning Dutch may well control the rule that die is the relative pronoun used to refer to de-words and dat the relative pronoun used for het-words, but continue to make mistakes because he does not know the gender of most words. In fact, the most advanced pattern of relative pronoun use found among our subjects was the use of die everywhere, a pattern which reflected these same subjects' tendency to use de exclusively as the definite article.

Besides the similarity of first and second language learning in terms of the role of semantics, there was a similarity between some of the strategies our subjects used in the translation task and aspects of first language learning. A very early approach to translation involved a 'lexical fill-in strategy', producing a basically English sentence in which the known Dutch lexical items were filled in. Interestingly, these basically English sentences also deviated from correct English in ways which revealed some recognition on the subject's part that Dutch syntax differs from English syntax, e.g., in deletion of the auxiliary as in sentence (1) (group and age of the subject who produced the sentence are given in parentheses):

(1) ik going to eet my appel (beg-6) (Dutch words underlined)

which was offered as a translation for 'I'm going to eat my apple.' Some sentences produced by this strategy showed a fairly sophisticated adjustment to the Dutch phonological system. In sentences (2)-(4) the segments pronounced as if they were Dutch are underlined:

(2) we going weg (beg-7)
(we're going away)

(3) ik would to go away (beg-6)
(I want to go away)

(4) mudder is waiting voor vadder (beg-6)
(Mother is waiting for father)

The lexical fill-in strategy fairly often led to sentences in which content words were Dutch and function words were English--sentences which, if the English words were deleted, would greatly resemble the 'telegraphic utterances' of early first language speakers.

Another strategy adopted by many of the subjects, both young and old, beginning and advanced, was the introduction of a superfluous auxiliary into the translations. Thus the sentence 'Lies puts the cup down' was often translated as (5)

(5) Lies {gaat / wil} het kopje neerzetten
(Lies {is going to / wants to} put the cup down)

and 'The children are watching television' was translated as (6)

(6) De kinderen zitten naar de TV te kijken (adv-7)
(the children are sitting watching television)

This superfluous-auxiliary strategy was applied by the advanced subjects to produce grammatically correct sentences like those quoted above, and by beginners to produce extremely ungrammatical sentences such as (7)-(10):

(7) Lies is lopen naar de huis (beg-8)
(Lies is walking by the house)

(8) De kinderen was op TV kijken (beg-10)
(The children are watching television)

(9) De lamp is van de ceiling hangen (beg-11)
(The lamp is hanging from the ceiling)

(10) Ik was een koekje eten wenn moeder was huisgekomt (beg-12)
(I was eating a cookie when mother came home)

Some intermediate sentences, which indicate how the early, English-influenced auxiliary gives rise to acceptable Dutch progressives and modals, are given in (11)-(13):

(11) De kinderen zijn de TV te kijken (beg-13)
(The children are watching television)

(12) Ik was een koekje eten wanneer moeder thuiskwam (beg-15)
(I was eating a cookie when mother came home)

(13) Ik was fietsen naar school wenn ik heb hem gezien (eg-11)
(I was bicycling to school when I saw him)

In (11) substitution of zitten for zijn or of aan het for te would produce a correct verb. In both (12) and (13) insertion of aan het before the main verb would produce a correct sentence.

Though this strategy is clearly influenced by the high frequency of progressive constructions with an auxiliary in English, and thus can be seen as a case of interference, it also shows that learners of Dutch as a second language select SOV sentences from the input as their model, just as two-year-old learners of Dutch as a first language do (Klein, 1974). Because the subjects identified the progressive construction in English with similar constructions in Dutch (zijn aan het V, zitten te V), they used the Dutch progressives much more frequently than native speakers would. However, they quickly adopted the Dutch SOV word order in these constructions, rather than persisting with the English SVO order.

A third area in which similarities between first and second language acquisition can be seen is in the way the verb inflectional system was acquired. The subjects in this study, like learners of Dutch as a first language, used the infinitive (or occasionally the stem) form of most verbs in all contexts. However, the copula zijn, the tense auxiliary hebben (have), modals, and the semi-modal gaan (go) were inflected correctly quite early. Overgeneralization of weak verb endings to strong verbs occurred (e.g., gezagd for gezien, seen; gekomt for gekomen, come; geeten for gegeten, eaten; eette for at, ate) in more advanced subjects than those who produced the correct strong forms, just as has been described for first language learning (Ervin, 1964).

The primary conclusion to be drawn from this very preliminary report of an ongoing study is that youth gives no special advantage

in language learning. Older children and adults do better at all aspects of language acquisition than the younger children, but the strategies and stages of acquisition seemed very similar for all age groups. The similarities which exist between the acquisition of a first and of a second language can be largely attributed to the primary role played by semantics in both acquisition processes.

References

Berko, J. The child's learning of English morphology. Word, 1958, 14, 150-177.

Christopherson, P. Second-language learning: Myth and reality. Penguin Education: Harmondsworth, Middlesex, England, 1973.

Dunn, L. Peabody Picture Vocabulary Test. American Guidance Service, Inc.: Circle Pines, Minnesota, 1959.

Ervin, S. Imitation and structural change in children's language. In E. Lenneberg (Ed.), New directions in the study of language. M. I. T. Press: Cambridge, Mass., 1964.

Gardner, R. C. Attitudes and motivation: Their role in second language acquisition. In J. Oller & J. Richards (Eds.), Focus on the learner: Pragmatic perspectives for the language teacher. Newbury House: Rowley, Mass., 1973.

Gleitman, L. & Gleitman, H. Phrase and paraphrase: Some innovative uses of language. Norton: New York, 1970.

Heringer, H. Research on negative quantifier dialects. In Papers from the 6th regional meeting of the Chicago Linguistic Society, 1970.

Jacobovits, L. Foreign language learning. Newbury House: Rowley, Mass., 1970.

Klein, R. Word order: Dutch children and their mothers. Publication No. 9, Institute for General Linguistics, University of Amsterdam,

1974.

Lambert, W. E., & Gardner, R. Attitudes and motivation in second language learning. Newbury House: Rowley, Mass., 1972.

Lenneberg, E. Biological foundations of language. Wiley: New York, 1967.

Macnamara, J. The cognitive basis of language learning in infants. Psychological Review, 1972, 79, 1-13.

Macnamara, J. The cognitive strategies of language learning. In J. Oller & J. Richards (Eds.), Focus on the learner: Pragmatic perspectives for the language teacher. Newbury House: Rowley, Mass., 1973.

Manschot, W. & Bonnema, J. Experimentele Nederlandse normering van de Peabody Picture Vocabulary Test. Swets & Zeitlinger: Amsterdam, 1974.

Slobin, D. The acquisition of Russian as a native language. In F. Smith & G. Miller (Eds.), The genesis of language: A psycholinguistic approach. M. I. T. Press: Cambridge, Mass., 1966.

Snow, C. Mothers' speech research: An overview. Paper presented at SSRC Conference on Language Input and Acquisition, Boston, Mass., 1974.

Table 1. The sample. The numbers of male and female subjects in each subgroup are entered under Total. The numbers for whom data are available for the individual tests are entered after the name of the test: auditory discrimination (aud d), morphology (morph), vocabulary (vocab), and translation (trans). These numbers vary because it was impossible to carry out some tests with some (especially younger) subjects, and because data from subjects included later in the sample are not yet included.

AGE	TEST	BEGINNERS		ADVANCED	
		male	female	male	female
3-5 years	aud d	1	5		
	morph	0	0		
	vocab	1	6		
	trnas	1	2		
	total	1	6		
6-7 years	aud d	4	3	1	3
	morph	1	0	2	3
	vocab	4	3	2	3
	trans	2	3	1	3
	total	5	3	2	3
8-10 years	aud d	5	3	4	1
	morph	4	3	4	1
	vocab	5	3	4	1
	trans	5	3	4	1
	total	6	4	4	1
12-15 years	aud d	5	1	2	3
	morph	5	1	2	3
	vocab	5	1	2	3
	trans	5	1	2	3
	total	5	1	2	4
adult	aud d	4	6	2	6
	morph	4	6	2	7
	vocab	4	6	2	7
	trans	4	6	2	7
	total	4	6	2	7

Table 2. Medians of the five age groups, beginning and advanced, on the auditory discrimination test, on the morphology subtests for plural, diminutive, agentive, past tense, past participle, and singular, on the PPVT vocabulary test, and on the translation test. The number of subjects contributing to each median can be seen from Table 1. Scores indicated are number correct, except for auditory discrimination. Where relevant, the maximum possible score is given under the name of the test.

		AGE				
TEST	GROUP	3-5	6-7	8-10	12-15	adult
aud d	beg	5.0	6.2	5.9	2.0	6.7
(errors)	adv	-	1.0	3.0	1.0	3.5
Morphology						
plural	beg	-	5	7	7	10
(13)	adv	-	9	9	9	9
dimin	beg	-	5	8	11	9
(25)	adv	-	18	17	20	14
agent	beg	-	0	3	5	5
(8)	adv	-	5	3	6	5
past	beg	-	0	0	4	0
(16)	adv	-	7	7	5	3
particip	beg	-	0	1	5	5
(16)	adv	-	12	12	10	10
singular	beg	-	0	0	2	1
(4)	adv	-	3	3	4	4
vocab	beg	24/50	29/50	57/100	71/100	66/100
(50 or 100)	adv	-	46/50	81/100	87/100	87/100
trans	beg	33	79	154	245	185
(325)	adv	-	267	288	292	281

Table 3. Medians of the beginning and advanced groups on 25 variables extracted from the translation test. Maximum possible scores are given in parentheses next to the name of the variable.

	BEGINNING					ADVANCED			
VARIABLE	3-5	6-7	8-10	12-15	adult	6-7	8-10	12-15	adult
subject (49)	12.0	25.0	40.0	44.8	44.8	46.5	47.7	47.7	46.0
direct object (25)	1.0	6.0	19.5	22.1	20.5	24.5	24.3	24.9	24.7
adverbial (12)	1.0	1.0	6.7	10.0	7.5	11.0	11.9	11.0	11.8
preposition (23)	2.0	6.0	12.5	5.5	12.5	17.0	19.2	18.0	16.2
verbal prep (9)	0.0	1.0	0.7	4.5	1.1	6.5	8.0	7.0	6.2
modal aux. (9)	0.2	1.0	4.0	6.0	3.5	6.1	6.9	6.9	6.2
tense (9)	0.3	0.3	2.9	6.0	1.0	7.1	7.2	6.6	6.2
verbs, gen (40)	1.0	7.0	16.5	30.0	21.0	33.5	36.0	37.6	35.2
trans verbs (7)	0.0	1.0	2.2	5.0	2.0	4.0	5.9	6.2	6.7
prep verbs (9)	0.0	1.0	2.5	7.5	5.0	7.7	8.9	8.2	8.7
posit verbs (14)	1.2	4.8	5.0	8.5	6.0	10.5	7.2	8.8	9.0
'to' have' 95)	0.2	2.0	4.7	4.8	3.5	5.0	5.0	5.0	5.0
indirect object (2)	0.0	0.3	0.1	0.2	0.1	1.9	1.9	1.8	1.9
particles (9)	1.0	1.0	3.8	4.1	3.0	5.0	5.2	5.8	5.7
negation (4)	0.2	1.2	1.1	3.9	3.0	4.0	4.0	4.0	4.0
'er' (2)	0.0	1.2	1.8	1.8	1.7	2.0	2.0	2.0	1.8
pronoun (3)	0.0	0.3	0.3	1.8	0.3	2.5	2.2	2.2	2.7
conj/comp/rel pronouns (14)	0.0	0.3	3.0	6.0	4.5	11.0	10.2	10.8	10.7
'een' (2)	0.2	0.8	1.8	2.1	2.0	2.0	2.0	2.0	2.0
ø (8)	0.0	1.3	1.5	2.5	1.7	3.5	3.6	6.8	6.2
'de' (12)	1.0	5.3	6.5	13.5	9.5	16.0	14.2	17.7	15.0
'het' (9)	0.2	0.1	0.0	1.7	2.0	2.5	1.2	2.0	3.0
word order main clause (35)	3.0	9.0	20.0	31.0	25.5	30.5	34.2	34.1	33.0
word order, sub clause (14)	0.0	0.8	0.3	3.5	2.5	12.5	13.2	12.8	10.0